

CLIMATE NEWS

From Sheldon Whitehouse, Barbara Boxer, and Jeff Merkley
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Climate Change Already Affecting Navajo Nation



A new University of Colorado report details how climate change threatens the Navajo Nation and what it can do to adapt. Since 1994, the reservation has experienced drought conditions punctuated by occasional wetness, and conditions may get worse. Annual average temperatures in the Southwest rose by 1.6°F between 1901 and 2010 and could increase by 2 to 9°F by the end of this century. Due to declining snowpack and earlier snowmelt, many streams that used to flow year-round now only flow intermittently, if at all. The report also found that sand dunes, which have buried Navajo homes, ranches, and crops since the 1950s, could become more widespread as droughts change sand dune mobility and coverage. Native communities face unique adaptation challenges because they are threatened culturally and religiously, as well as environmentally. But there may be some small benefits to warming, the report found. For example, the reservation's growing season is 17 days longer than in the 20th century. And the Navajo Nation "may be particularly well-poised to take leadership on adaptation planning, because they have the sovereign authority to address some of these issues very effectively," said lead author Julie Nania. (*ClimateWire*)

NASA: Ice Melt in Part of Antarctica 'Appears Unstoppable'

The climate change-induced melting of a major section of West Antarctica's ice sheet could lead to higher than anticipated end-of-century global sea levels, according to a NASA-UC Irvine paper published in *Geophysical Research Letters*. Warm ocean currents and geographic peculiarities helped kick off a chain reaction, melting Amundsen Sea-area glaciers faster than previously realized and pushing them "past the point of no return," said lead author Eric Rignot. The region has enough ice to raise global sea levels by 4 feet. Estimated conservatively, it could take several centuries for that portion to melt, said Rignot. But the melting could have an effect this century, said Penn State professor Sridhar Anandakrishnan. The UN's most recent climate report estimates sea-level rise of about 1 to 3 feet by 2100, which could displace tens of millions of people from coastal areas. Yet that estimate largely didn't account for West Antarctic melting, because few studies for that area had been completed. Anandakrishnan said it was possible for that melting to destabilize other ice sheets. The entire West Antarctic ice sheet has enough ice to raise the global sea level by about 16 feet. (*CNN/2014GL060140*)

High Atmospheric CO₂ Could Make Crops Less Nutritious

Crops grown in the high carbon dioxide (CO₂) atmosphere of the future could be significantly less nutritious, according to a study published last week in *Nature*. Based on hundreds of field experiments in Japan, Australia, and the U.S., the study reveals a new challenge as society reckons with rising carbon emissions and malnutrition in the future. Scientists generally predict that crop yields could fall in a warmer world because of drought, pests, and other climate-related threats. But the effect of climate change on the nutritional value of crops, as opposed to their yield, had been murkier. In the largest study yet, Harvard University researchers found that the CO₂ levels expected in the second half of this century will likely reduce the levels of zinc, iron, and protein in wheat, rice, peas, and soybeans. Some two billion people live in countries where citizens receive more than 60 percent of their zinc or iron from these types of crops. Deficiencies of these nutrients already cause an estimated loss of 63 million life-years annually. The "enormous number of observations" in the study "gave us the statistical power to resolve a question which has been open in the literature," said lead author Samuel Myers. "Crops are losing nutrients as CO₂ is going up." (*NatGeo/nature13179*)

Insurers Must Consider Climate Threats, Says Lloyd's of London

Global insurance marketplace Lloyd's of London last week called on the insurance industry to factor climate change into risk models, adding its voice to those demanding that the economic effects of extreme weather be taken seriously. For the first time, Lloyd's said the industry should consider climate change as a result of increasing greenhouse gas concentrations in the atmosphere. Lloyd's suggested that models used to analyze and measure risk be revised annually to ensure they reflect changing weather patterns. "Climate change is having a direct impact on the business community and the bottom line," said Trevor Maynard, head of exposure management at Lloyd's. The insurance industry has suffered major losses in recent years due to extreme weather. In 2011 insured losses cost the industry more than \$126 billion with \$35 billion from Superstorm Sandy alone, according to Lloyd's. Maynard said severe weather events were increasing as a result of climate change—which he insisted is taking place and is man-made. (*CNBC*) 